ELSEVIER

Volume 74, Numbers 1–3, February 1998

Journal of
Materials
Processing
Technology

Contents

News Announcement ix

The slip-line function model approach to plane dynamic analysis of visioplasticity 1
J.P. Wang

Preparation and thermal properties of amorphous Fe–W–B alloy nano-powders 10
Y. Ge, G. Ying, Z. Bangwei, W. Lingling, O. Yifang, L. Shuzhi

Modelling of the elasto-plastic behavior of rolled aluminium alloy for forming applications 14
C. Schmitt, P. Lipinski

Study of the thermal fatigue crack initial life of H13 and H21 steels 23
G. Li, X. Li, J. Wu

Effect of welding process on the ballistic performance of high-strength low-alloy steel weldments 27
G. Madhusudhan Reddy, T. Mohandas, K.K. Papukutty

Damage evolution for the constrained bulging process of superplastic materials into cone–disk shaped dies 36
P. Hu, Y. Cao, X. Liu

Prediction of the expulsion load in precision forging operations 44
G. Donzella, C. Giardini

Decreasing the sintering temperature of diamond-bit matrix material by the addition of the element P 52
D. Huadong, L. Yawen, H. Hongqi, J. Zhihao

Grain refinement of DIN226S alloy at lower titanium and boron addition levels 56
B. Hu, H. Li

An investigation into the actual EDM off-time in SEA machining 61
Y.F. Luo

Liquid-phase sintering and properties of Cr_3C_2/NiCr cermets 69
C. Duran, S. Eroglu

Study of stress development in axi-symmetric products processed by radial forging using a 3-D non-linear finite-element method 74
D.Y. Jang, J.H. Liou

The restoration of the margin of metal plasticity after cold deformation 83
V.L. Kolmogorov, S.V. Smirnov

FEM simulation of the temperature field during the laser forming of sheet metal 89
Z. Ji, S. Wu

Optimization of the contact surface shape of a shrinkage fit 96
J.F. Fontaine, I.E. Siala

Statistical analysis of cutting force ratios for flank-wear monitoring 104
J.H. Lee, D.E. Kim, S.J. Lee

The character of sintering under vacuum and its use in hot isostatic pressing in comparison with the air pre-sintering and slurry coating techniques for alumina–zirconia composites 115
F. Zhang, L. Yang, X. Huang, D. Zhu

Study of the corrosion protection properties of Al–Zn films synthesized by IBAD 122
B. Wang, Z.-W. Lai, C.-B. Jiang

Vortex of electrons, π-bonding of atoms and superconduction 126
H. Kuk-Oh

Elsevier Science S.A.
PII S0924-0136(97)00402-08

Electrolytic cut-off grinding machine for composite materials 131
M. Yoshino, T. Shirakashi, T. Obikawa, E. Usui

Phase investigation of a cobalt base alloy containing Cr, Ni, W and C 137
V. Kuzucu, M. Ceylan, H. Çelik, İ. Aksoy

Hot formability of an Al2009/20SiC$_w$ composite sheet 142
K.C. Chan, G.Q. Tong, L. Gao

Modeling and optimization of drilling process. 149
B.Y. Lee, H.S. Liu, Y.S. Tarng

A thermal model for the foil rolling process. 158
C. Luo, H. Keife

Autogenous laser welding of stainless steel to free-cutting steel for the manufacture of hydraulic valves 174
Z. Li, G. Fontana

Structure and properties of carburized and hardened niobium micro-alloyed steels 183
Md.A. Islam, Md.M.A. Bepari

Experimental study of the deformation laws of hemispherical parts in the compound-forming process 190
Y.L. Liu, C. Jiayou, F. Sheng

Research on the optimal permutation of the nodes of a finite-element network 195
X. Yuan, X.H. Zhou, X.Y. Ruan

An investigation into welding of engineering thermoplastics using focused microwave energy 199
P.K.D.V. Yarlagadda, T.C. Chai

Plastic deformation of porous metal with an initial inhomogeneous density distribution 213
H.S. Kim, C.W. Won, B.S. Chun

Preform design in axisymmetric forging by a new FEM–UBET method 218
Q. Liu, W. Shichun, S. Sheng

A study of the entry-region length of circular extrusion dies 223
J.Z. Liang, X.L. Sun, C.Y. Tang, G.J. Tang

Determination of flow curves by means of a compression test under sticking friction conditions using an iterative finite-element procedure. 227
E. Parteder, R. Bünten

Laser cutting of metallic coated sheet steels 234
G.V.S. Prasad, E. Siores, W.C.K. Wong

Rhenium recovery from Sarcheshmeh molybdenite concentrate 243
M.H. Shariat, M. Hassani

Optimising abrasive waterjet cutting of ceramic materials 251
L. Chen, E. Siores, W.C.K. Wong

Research on residual stress reduction by a low frequency alternating magnetic field. 255
F. Tang, A.L. Lu, J.F. Mei, H.Z. Fang, X.J. Luo

Research on residual-stress reduction by strong pulsed magnetic treatment 259
A.L. Lu, F. Tang, X.J. Luo, J.F. Mei, H.Z. Fang

Ductile fracture in axisymmetric extrusion 263
S. Choi, Y.-S. Lee, H.-K. Oh

Influence of the geometrical parameters of the chip groove on chip breaking performance using new-style chip formers. 268
N. Fang

Bifurcation and post-bifurcation behaviour in sheet metal tension with strong anisotropy 276
P. Hu, J. Na, D.Y. Li

Pressure generated in the hydraulic-pressure augmented deep-drawing process 286
S. Thiruvarudchelvan, H.B. Wang

Analysis of the phenomena of non-Fourier heat conduction in switch-Q laser processing for reducing the core loss of grain-oriented silicon steel 292
J. Li, Y. Gu, Z. Guo

Improvement of the forgability of 17-4 precipitation hardening stainless steel by ausforming 298
S. Isogawa, H. Yoshida, Y. Hosoi, Y. Tozawa

Conference Calendar 307
Author Index. 309